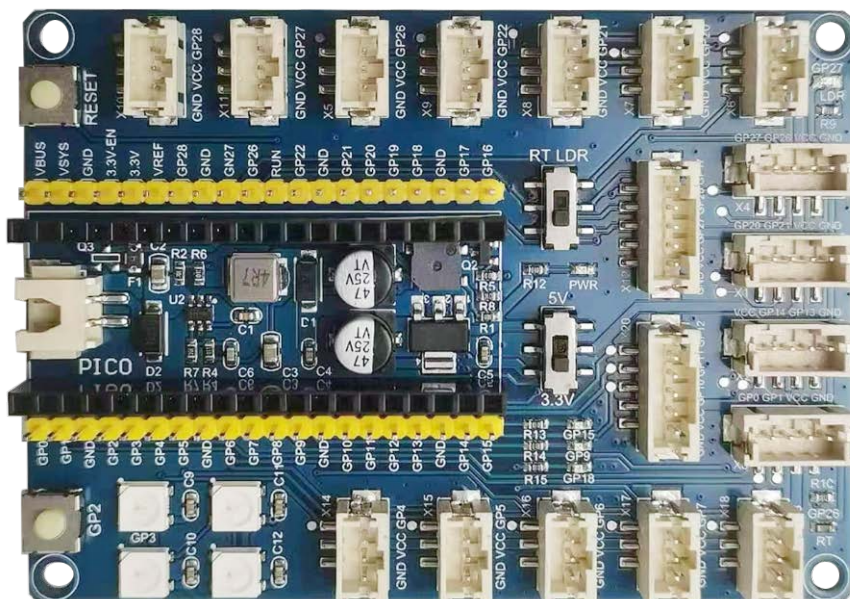


Introduction of Pico_Extension_Board

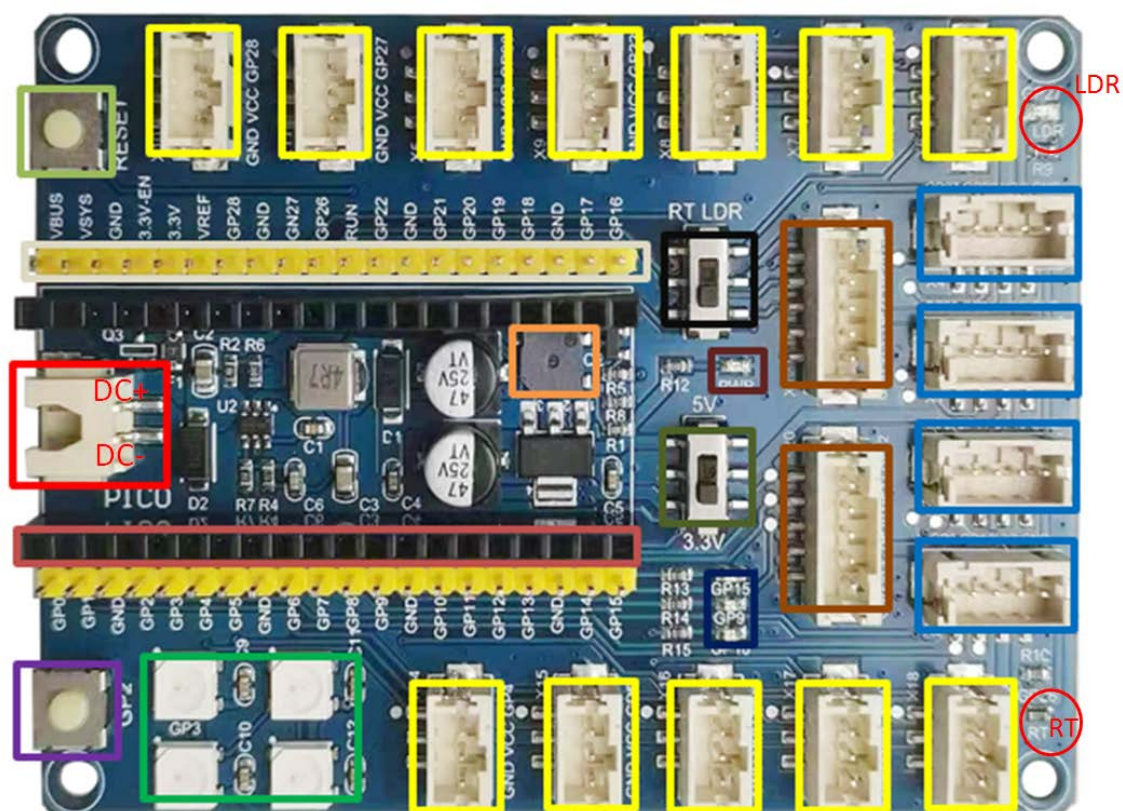
Pico Extension Board

The Pico Expansion Board is an important part of the kit, and it works with the Pico to extend the functionality of the Pico. From the picture below we can see that all Pico edge interface have been connected to the Pico Extension Board, there are many interfaces on the Pico Extension Board, designed to connect the Pico and the sensor module. You can connect sensor modules to the board through these interfaces for additional functionality. At the same time, the Pico expansion board also adds photosensitive, thermal, WS2812 and other functions, which makes the gameplay more diverse. It's very suitable for electronic enthusiasts to use in DIY. Let's take a look at the composition of the Pico expansion board and all interfaces.















PS: The Pico expansion board is simply referred to as the expansion board in the following introduction.



Interfaces and important component layout as follow:



The hardware interfaces and important component are distributed as follow:

Frame color	Description	Frame color	Description
	Power Port		LED
	GPIO2		Power Switch
	Interface		Power LED
	WS2812		RT/LTR
	3 Pin Connector		40 PIN
	4 Pin Connector		RESET
	5 Pin Connector		Buzzer

Detailed instruction of the hardware interfaces and important component

[GPIO2]: Press the button GPIO2, the pin is connected to GND, and the pin is in a floating state when the button GPIO2 pops up. Not available as a button.

[WS2812]: The expansion board has built-in WS2812 lights. Occupies GPIO3 pin.

[3 Pin Connector]: 12 pcs 3Pin interfaces. These interfaces can be connected to sensors with 3Pin interfaces, and the functions of these sensors can be realized through Pico.

[4 Pin Connector]: 4 pcs 4Pin interfaces. These interfaces can be connected to sensors with 4Pin interfaces, and the functions of these sensors can be realized through Pico.

[5 Pin Connector]: 2 pcs 5Pin interfaces. These interfaces can be connected to sensors with 5Pin interfaces, and the functions of these sensors can be realized through Pico.

[Power Switch]: Power toggle switch. When the switch is turned to the left, the VCC of all interfaces on the expansion board is 3.3V; when the switch is turned to the right, the VCC of all interfaces on the expansion board is 5V.

[RT/LDR]: Pin switch. When the switch is turned to the left, the built-in thermistor and photoresistor of the expansion board are disconnected from the pin of the Pico. When the switch is turned to the right, the built-in thermistor and photoresistor of the expansion board are connected to the pin of the Pico.

[RT]: The expansion board has a built-in thermistor. When the RT/LDR switch is on the upper side, it occupies the Pico GPIO26 pin.

[LDR]: The expansion board has a built-in photoresistor. When the RT/LDR switch is on the upper side, it occupies the Pico GPIO27 pin.

[Buzzer]: The expansion board has built-in passive buzzer. Occupies the Pico GPIO16 pin.

[Reset]: Reset button. Reset the Pico RP2040 chip after pressing the button. Restart Pico.

[Interface]: Interface for mounting the Pico to the expansion board.

[40Pin]: Connect directly to the pin of the Pico.

[Power]: Power the expansion board.

[PWR LED]: Power Indicator.

[LED]: The expansion board has three built-in LED lights. Occupy the GPIO15, GPIO9, GPIO18 pins of Pico respectively.

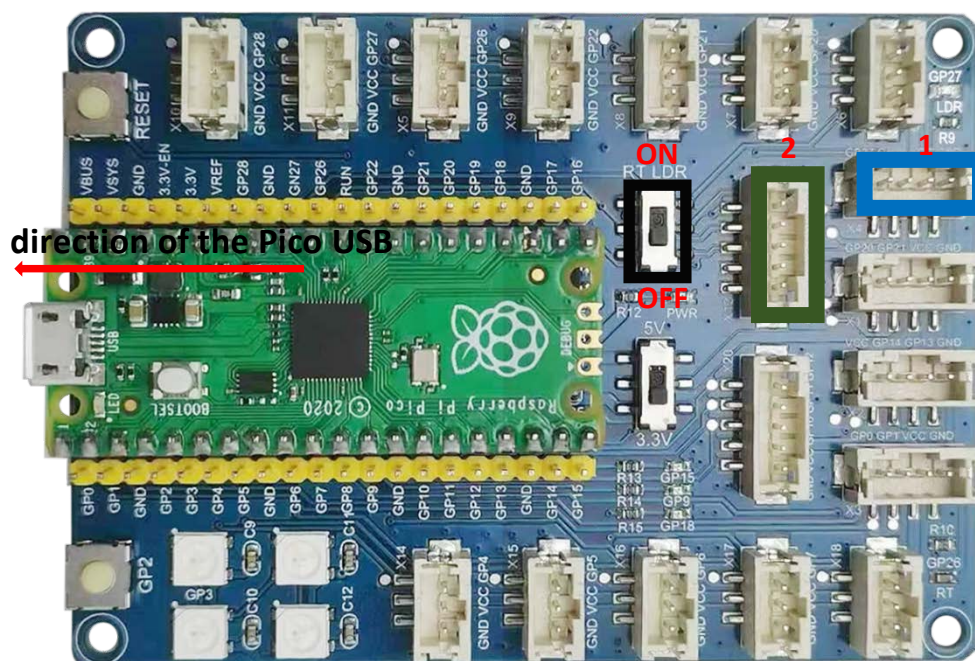
Notes:

1,Installation of Pico: Before using the expansion board, the Pico needs to be correctly installed on the expansion board. The USB port of the Pico is in the same direction as the power port of the expansion board, as shown in the figure below

2,Power supply: The expansion board power interface supports the DC voltage input range of 7V-12V, usually we use 2 pcs 18650 batteries to power it. It is not recommended to directly use the USB cable to supply power to the expansion board through Pico, which may lead to insufficient power supply and the sensors connected to the expansion board cannot work normally.

3,When the RT/LTR Switch is in the ON state, the connection between the RT/LTR and the Pico on the expansion board works. The connector1 is connected to the RT/LTR, connector2 is disconnected from Pico;

4,When the RT/LTR Switch is in the OFF state, the connection between the RT/LTR on the expansion board and the Pico is disconnected, and the connector2 is connected with the Pico. The connection between connector1 and connector2 is a part of connector2. It is recommended to use connector2 instead of connector1 in this state, because connector2 has one more GP17 signal pin than connector1, which is more convenient to use. In this state, connector2 can be connected to a sensor module, such as a joystick module.



What's Next?

THANK YOU for reading this document of this Pico expansion board !

If you find errors, omissions or you have suggestions and/or questions about this document, please feel free to contact us: cokoino@outlook.com

We will make every effort to make changes and correct errors as soon as feasibly possible and publish a revised version.

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